

REMARKS

Careful consideration has been given by the applicants to the Examiner's comments and rejection of the claims, as set forth in the outstanding Office Action, and favorable reconsideration and allowance of the application, as amended, is earnestly solicited.

Applicants note the requirement for affirmation of an election of species, and accordingly, applicants herewith affirm the election of species A, comprising Claims 1-20. Claims 21-23 have been withdrawn from examination, and applicants reserve the right to file a divisional application directed thereon in due course, in the event that no generic claim is found to be allowable.

Concerning the Information Disclosure Statement, wherein the Examiner raises objections, applicants fail to ascertain the problem encountered by the Examiner, inasmuch as the original Information Disclosure Statement included legible copies of the Japanese publications and English-language Abstracts in conformance with the requirements. Accordingly, applicants respectfully question the Examiner's objection in that regard and request that all of the publications referred to in the Information Disclosure Statement, and which incidentally were also discussed in the specification, as representative of the state of the prior art, be considered during the prosecution of this case. However, in any event, the claims are deemed to clearly and patentably distinguish over the prior art, which was submitted by the applicants.

Applicants further note the Examiner's objections to the disclosure and the minor correction in Paragraph [0032] has been implemented.

Moreover, with regard to the claim objections, applicants have indicated the word "Claim" in line one of the various claims in lowercase lettering. However, pursuant to the U.S. practice, uppercase lettering identifying a claim is permitted in the event that the word "claim" is

accompanied by a numerical designation. However, the amendment to the claims is deemed to render the particular ground of objection to be moot.

Applicants further note the rejection of Claims 1, 5, 6, 11, 15 and 16 under 35 U.S.C. §112, second paragraph in that the Examiner objects to the term "core" and, accordingly, inasmuch as this has been clearly identified in the specification as comprising the "substrate", the claims have been amended in that regard, thereby also rendering moot this particular ground of objection.

In addition to the foregoing, applicants note the Examiner's rejection of Claims 1, 3, 4, 8, 11, 13, 14 and 18 under 35 U.S.C. §102(e), as being anticipated by Towle, et al, U.S. Patent No. 6,834,133 B1, as extensively discussed in the Office Action; and the rejection of Claims 2, 9, 10, 12, 19 and 20 under 35 U.S.C. §103(a), as being unpatentable over Towle, et al., as applied to the preceding claims, and further in view of Oono, et al., U.S. 2005/0105860 A1, as also detailed in the Office Action.

Finally, applicants note the rejection of Claims 5-7 and 15-17 under 35 U.S.C. §103(a), as being unpatentable over Towle, et al. in view of Yoshizawa, et al., US 2002/0084522 A1, as also detailed in the Office Action.

Accordingly, upon careful consideration of the art, applicants respectfully submit that the claims clearly and unambiguously are directed to allowable and patentable subject matter, irrespective as to whether the publications are considered singly or in combination.

In particular, applicants note that the particular opto-electronic package facilitates the passive alignment of VCSELs to waveguides and, in essence, although the broad concepts are known in the technology, affords a precise and alignment and chips relative to an opto-electronic card or printed circuit board through the intermediary of a C4 solder reflow. The

improved passive alignment by means of the inventive structure and method of combining and producing the components proves the thermal stability of the applicable opto-electronic card or printed circuit board by the employment of a substrate which is constituted at a low expansion material and, thus, accommodates larger VCSELs and pin arrays, as well as facilitating smaller waveguide dimensions.

The use of the C4s, which are also generally located on different wiring layers and the waveguides and the adaptability of readily controlling the precision of alignment between the various components and the mirrors of the waveguide also obtained by the use of a second cladding or organic layer located on a substrate so as to form waveguide channels and C4 openings.

None of the foregoing features, which are found in the claims, as amended herein, wherein Claim 1 incorporates, respectively, the structure of Claims 3 and 4, whereas Claim 11 comprises the method steps of Claims 13 and 14, distinguish over the art in setting forth these particular structural and functional aspects.


Concerning Towle, et al., this fails to provide the particular type of C4 connections in the structural relationship between the components, as discussed hereinabove.

Similarly, with regard to Oono, et al., this merely provides for solder connections and also fails to disclose, whether considered singly or in combination with Towle, et al., the inventive structure.

Yoshizawa, et al. discloses an interposer substrate and various through-vias to connect built-up layers. Again, there is no unique combination of the waveguides and the optical components and the various chips in a manner produced by the present invention, as set forth in the claims.

In view of the foregoing comments and wherein the claims are deemed to clearly and patentably distinguish over the art, the early and favorable reconsideration and allowance of the application by the Examiner is earnestly solicited. However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicants' attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,


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